

PINE ORCHARD HARBOR

BRANFORD CONNECTICUT

PRELIMINARY EXAMINATION



CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION, BOSTON, MASS.

FEBRUARY 24, 1956

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PRELIMINARY EXAMINATION

PINE ORCHARD HARBOR
CONNECTICUT

SYLLABUS

The Division Engineer considers that Federal improvement of Pine Orchard Harbor for recreational craft is not warranted at this time because the benefits from such improvement would not be sufficient to justify the cost, and it is doubtful that an adequate public landing could be provided near the desired anchorage.

The Division Engineer considers that a survey study to determine the cost and economic justification of improvement for commercial navigation is warranted at this time.

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION
BOSTON, MASS.

NEDGW

24 February 1956

SUBJECT: Preliminary Examination of Pine Orchard Harbor, Branford,
Connecticut

TO: Chief of Engineers, Department of the Army, Washington 25, D. C.

AUTHORITY

1. This preliminary examination report is submitted in compliance with an item included in Section 7 of the River and Harbor Act approved July 24, 1946, which reads as follows:

"THE SECRETARY OF WAR IS HEREBY AUTHORIZED AND DIRECTED TO
CAUSE PRELIMINARY EXAMINATION AND SURVEYS TO BE MADE AT
. HARBOR AT PINE ORCHARD, BRANFORD, CONNECTICUT"

2. A report of preliminary examination scope was authorized July 31, 1946 by the Chief of Engineers.

SCOPE OF EXAMINATION

3. In the preparation of this report, office studies have been made using data obtained from existing records, a public hearing and local interests. No detailed field work has been undertaken.

DESCRIPTION

4. Pine Orchard Harbor is on the north shore of Long Island Sound in Branford, Connecticut, about 7 miles east of the entrance to New Haven Harbor and about 3 miles east of Branford Harbor. The harbor is a small cove protected on the west by a breakwater extending from Brown Point at Pine Orchard and the shoal area of Blackstone Rocks. A group of small rocky islands, The Thimbles, extend about 1.5 miles south from Pleasant Point and partly shelter the harbor on the east.

5. On the west side of Pine Orchard Harbor is the Pine Orchard yacht basin, an area of about 20 acres east of Brown Point that has been improved by local interests as an anchorage for recreational craft. A 12-foot channel to the basin and dock of the New Haven Trap Rock Company at the head of the harbor has been maintained by that company.

6. There are no bridges crossing the harbor. The mean range of tides at Money Island in The Thimbles is 5.6 feet. The spring range is 6.6 feet. The locality is shown on U. S. Coast and Geodetic Survey charts Nos. 217 and 1212, and on the map accompanying this report.

TRIBUTARY AREA

7. The area tributary to the harbor consists of the Pine Orchard section of Branford, which is mainly an exclusive residential area of large summer homes and hotels. The single industrial activity is the quarrying and shipping of trap rock by the New Haven Trap Rock Company. The principal local occupation is the summer resort business. Inland from the harbor there is a small amount of farming.

8. The Branford Steam Railway, a subsidiary of the New Haven Trap Rock Company, provides freight service from their quarry in North Branford to a wharf at Pine Orchard Harbor and a connection to the Shore Line of the New York-New Haven and Hartford Railroad. Railroad and bus service are available at Branford and New Haven. The area is served by a network of good roads.

PRIOR REPORTS

9. There have been no prior reports on Pine Orchard Harbor, and no Federal project has ever been adopted for improvement of the harbor.

OTHER IMPROVEMENTS

10. All improvements at Pine Orchard Harbor have been accomplished by local interests. Since 1924, a breakwater about 800 feet long has been constructed to shelter the yacht basin and an area of about 7 acres has been dredged to 7 feet at mean low water. The expenditures by local interests for this improvement have been about \$153,000, of which \$93,000 was for original work and \$60,000 for maintenance dredging completed in 1951. In addition, the yacht club has constructed a club house, a dock with slips for about 20 boats, and provided mooring piles. The New Haven Trap Rock Co. has constructed and maintained a 12-foot channel to their dock with a turning basin and berth for the shipment of stone by barge. The cost of this work is not known.

TERMINAL AND TRANSFER FACILITIES

11. The Pine Orchard Club has a pile and timber dock in front of the club house. Depths alongside range from 3 to 7 feet. Gasoline, water and supplies are available to club members and guests at this dock. The club has also provided a small pile and timber pier at the inshore end of the breakwater as well as mooring piles for recreational craft.

12. The New Haven Trap Rock Company dock is a pile and timber structure about 300 feet long with depths alongside of about 12 feet. On the dock is a loading conveyor from a storage area. Crushed stone is brought to the dock from the North Branford quarry over the Branford Steam Railway.

and gravity dumped into a storage area. Mooring pile clusters have been provided in the turning basin for barges awaiting loading or a tug. There are no provisions for unloading vessels at this dock.

IMPROVEMENT DESIRED

13. A public hearing was held at Pine Orchard August 26, 1948. A Representative in Congress, representatives of the State and local Governments, the Pine Orchard Association, the Pine Orchard Club, and local businessmen and residents were present. Improvement of the harbor for recreational craft was sponsored principally by the Pine Orchard Club. The improvements desired consisted of providing a 7.5 acre anchorage 8 feet deep and a 9.3 acre anchorage 6 feet deep, increasing the height of the existing breakwater by 4 feet to about 10 feet above mean low water, and constructing a new breakwater about 250 feet long southerly from St. Helena Island. The replacement of any mooring piles removed to permit dredging was also requested.

14. Local interests stated that if the proposed improvements were constructed, the capacity of the yacht basin would be doubled. The improvements provided by local interests were said to be inadequate for the boats that desired to use the yacht basin as a home port or a harbor of refuge. Local interests stated that the improvements would provide emergency shelter for commercial vessels of the New Haven Trap Rock Company, and the Stony Creek oyster fleet as well as encourage the establishment of a boat yard with hauling and repair facilities, reduce damages arising from collisions of moored boats when wind and tide changed, and greatly stimulate yachting activity.

15. No specific offer of local cooperation was made at the hearing, although it was indicated that a limited cash contribution could be expected from local interests.

16. Subsequent to the hearing, the New Haven Trap Rock Company in 1955 requested a 17-foot channel to the turning basin at their dock. It was stated that the existing channel was inadequate for the present and prospective volume of commerce and that serious tidal delays were experienced. The company presently ships stone in barges that are towed by tugs with 12 to 15 foot drafts. Loading and shipping are limited to periods of high tide.

17. The company stated that it has received inquiries from Nassau, Florida, Spain, and the Gulf region but has been unable to ship stone to these places because of the high cost of making shipments through New Haven Harbor. The company does plan to make a shipment of 35,000 tons of crushed stone to Bermuda on a small tramp steamer that will draw 16 feet loaded. To make this shipment, the company stated that it will have to dredge the channel to 12 feet and the loading area to 17 feet and ship the loaded vessel out at high tide. It was stated that the last maintenance dredging was accomplished in 1952 but the

channel has shoaled so that dredging is again required to accommodate normal traffic. The existing channel is reported to have required constant maintenance and has been dredged 7 times since 1920.

18. In 1955, the Pine Orchard Club presented a new request because a portion of the improvements requested at the hearing had since been accomplished by local interests. The improvement desired now would provide a 12-foot deep anchorage for about 250 pleasure boats. It was also suggested that the height of the existing breakwater be raised 4 feet, and extended about 500 feet and a new breakwater between Lewis and Rogers Islands be constructed to protect the anchorage and the channel. It was stated that a large increase in the recreational fleet would occur if the additional protected anchorage area was provided.

COMMERCE

19. Local interests have provided data on commerce at Pine Orchard Harbor. It was estimated by them that 250 pleasure craft use the yacht basin annually for permanent anchorage and regattas during the summer, drawing boats from various sections of Long Island Sound and the Eastern Seaboard.

20. Shipments of crushed stone from Pine Orchard Harbor have increased steadily during the past 10 years. Tonnage figures since 1950 as supplied by the New Haven Trap Rock Company are as follows:

<u>Year</u>	<u>Short tons</u>
1950	109,695
1951	174,182
1952	294,545
1953	356,929
1954	294,761

During this period the peak monthly tonnage was 55,329 tons, requiring the movement of 76 deck scows. The New Haven Trap Rock Company stated that it would be possible to ship an additional 2 barges or 1,400 tons a day if the channel was improved, and that shipments of up to 150,000 tons a year could be made to foreign ports if small steamers could reach their dock.

VESSEL TRAFFIC

21. The local recreation fleet consists of about 100 sail and power boats ranging in length from 14 to 50 feet. No estimate of the number of visiting craft has been furnished, and no record is available of the number of trips made by pleasure craft. The New Haven Trap Rock Company loads an estimated 410 barges a year. These barges are brought in and out by tug boats that ordinarily pick up a loaded barge when they bring in an empty one. This commerce results in about 820 vessel-trips by tug boats with draft of 12 to 15 feet.

DIFFICULTIES ATTENDING NAVIGATION

22. Local interests have indicated that the difficulties attending navigation are a lack of sheltered anchorage for the existing and prospective recreational fleet and the lack of depth in the commercial channel which necessitates tidal operation of tugs with barges.

WATER POWER AND OTHER SPECIAL SUBJECTS

23. There are no matters of water power, flood control or pollution pertinent to this report.

SHORE LINE CHANGES

24. Pine Orchard Harbor is located in a very irregular section of the Connecticut coastline that is generally composed of resistant rock with numerous pocket beaches between rocky points. Raising and extending the existing breakwater and construction of the additional breakwater as desired by local interests would probably have only minor effects on the adjacent shore line because of the protection afforded by the rock outcrops that form the pockets. Construction of the desired channel and anchorage would probably have no effect on the shore line.

DISCUSSION

25. Pine Orchard Harbor, in Branford, Connecticut on Long Island Sound about 7 miles east of New Haven, is a small harbor used by the recreational fleet of the Pine Orchard Club and tugs and barges transporting crushed stone from the New Haven Trap Rock Company dock. Local interests have dredged an anchorage area for recreational craft, constructed a breakwater, and provided mooring piles and docking facilities. The New Haven Trap Rock Company maintains a 12-foot channel to their wharf at the head of the harbor.

26. At the public hearing in 1948, local interests represented by the Pine Orchard Club, desired improvement of the harbor for recreational craft. It was stated that the anchorage previously dredged by local interests had shoaled and that the breakwater they had constructed had settled so that there was no longer adequate anchorage space or protection from storms. It was desired that the Federal Government deepen the existing anchorage to 9 feet, provide an additional 9 acre area to 7 feet, raise the height of the existing breakwater, and construct another breakwater. In 1951, local interests completed maintenance dredging of the existing anchorage. In 1955, a new proposal was presented by the Pine Orchard Club. The desired improvement now consists of a 12-foot deep anchorage for about 250 recreational craft, increased height and length of the existing breakwater, and an additional breakwater.

27. Local interests stated that the depths in the harbor were insufficient for the larger types of recreational craft, that the local fleet filled the yacht basin to capacity with no allowance for visiting craft, and that an improved harbor in this locality would serve as a harbor of refuge for the recreational boats that cruise Long Island Sound. It was claimed that there is opportunity to develop Pine Orchard further as a pleasure craft anchorage with the addition of permanent marina facilities, provided that the harbor is maintained in a satisfactory dredged condition and that additional sections of the area, hitherto unusable, could be made available for navigational purposes.

28. There was little protection from southerly storms prior to improvement by local interests. The improvements made have provided a fairly well protected harbor for the existing fleet. The desired improvement for recreational craft would provide more protection as well as providing anchorage for a greater number of boats. Construction of the desired improvements would entail dredging in relatively shallow water, reinforcing and raising the height of about 720 feet of breakwater, and construction of additional breakwaters. The cost of these improvements would be about one-half million dollars. Justification of such a program would depend on a large increase in recreational boating activity in the area. Local interests have not shown any definite anticipated increase and other nearby harbors offer extensive areas adaptable to boating activities. There are Federal navigation projects at Branford Harbor, 3 miles to the west and at Guilford Harbor, 5 miles to the east.

29. Establishment of a Federal project at Pine Orchard Harbor for recreational craft would necessitate substantial measures of local cooperation including a cash contribution. Although local private interests have indicated that a contribution within certain economic limits could be expected, officials of the Town of Branford have indicated that the Town would not be favorable toward assumption of a cash contribution. In addition a public landing open to all on equal and reasonable terms should be provided. The two private landings now available are operated by the Pine Orchard Club for the convenience of their members and guests. In view of the present property restrictions and ownerships it is doubtful that a public landing, with adequate public parking areas, access and facilities, would be provided near the desired anchorage.

30. In 1955, the New Haven Trap Rock Company requested a 17-foot channel to their dock to reduce tidal delay expenses of the tugs and barges now used for the shipment of about 300,000 tons of crushed stone annually. Stone from their quarry in North Branford is brought to the dock by the Branford Steam Railway, a company subsidiary, to be loaded onto barges. The company sells crushed stone at the dock, or ships it by barge, to contractors and construction jobs in southern New England and New York.

31. The tugs that tow the barges draw between 12 and 15 feet and suffer tidal delays in the 12-foot channel. As the company now ships about 410 barges a year, substantial benefits would be realized by eliminating this delay. These benefits are estimated to be sufficient to warrant improvement of the channel.

32. The benefits from commercial navigation in the desired 17-foot channel are partly local in nature as the channel would serve only a single interest, the New Haven Trap Rock Company. It is considered, therefore, that the company should participate in the cost of the improvement. Such participation by the New Haven Trap Rock Company would probably include a cash contribution toward the first cost of the 17-foot Federal channel and its maintenance as well as the provision and maintenance of depths in their berth and turning basin of at least 17 feet.

33. The New Haven Trap Rock Company has been consulted and has agreed to the above measures of local contribution. The company has also offered to provide spoil areas if needed.

CONCLUSION

34. Although local interests desire Federal improvement of Pine Orchard Harbor for recreational craft, it is considered (a) that the benefits from such improvement would not be sufficient to justify the large expenditure required, (b) that local interests should be required to make a substantial cash contribution but town officials have indicated that such cooperation is not assured, and (c) that in view of the restricted nature of property in the area it is doubtful that an adequate landing, open to the public on equal terms, could be provided near the desired anchorage.

35. Commercial navigation in the form of tugs with barges of crushed stone is subject to tidal delay in the existing 12-foot channel. Benefits from elimination of this delay appear to be sufficiently general in nature to justify Federal participation in a 17-foot channel project subject to certain requirements of local cooperation. The New Haven Trap Rock Company, as a single interest equally benefiting from the improvement has indicated its willingness to share in the cost of the improvement.

36. It is concluded that no further investigation of improvements for recreational craft at Pine Orchard Harbor is warranted at this time but that a survey study to determine the cost and economic justification of a 17-foot channel for commercial navigation is warranted.

RECOMMENDATION

37. The Division Engineer recommends that no further study be made on improvements for recreational craft at Pine Orchard Harbor at this time. He does recommend a study of survey scope to determine the cost and economic justification of a Federal project for commercial navigation and to determine the amount of local participation.

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